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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/781,864	02/12/2001	Peter van Eijk	Eijk 2-4-3-4-4-2-2-7	5136
22186	7590	12/30/2003		
MENDELSON AND ASSOCIATES PC 1515 MARKET STREET SUITE 715 PHILADELPHIA, PA 19102			EXAMINER CURS, NATHAN M	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 12/30/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/781,864

Applicant(s)

EIJK ET AL.

Examiner

Nathan Curs

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7,8,10-12 and 15-17 is/are rejected.
- 7) ☒ Claim(s) 9, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 6 and.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election with traverse of species 1 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that Figs. 3A-H show timing diagrams that illustrate the relationship between the values of  $T_{eq}$ ,  $T_{id}$ , and  $T_d$  as well as provide a simple explanation of the ranging process carried out in ATM-PON system that conform to the ITU-T Recommendation G.983.1; and as such, do not correspond to a species of the present invention for which any claims are readable thereon. This is not found persuasive because although Figs. 3A-H show timing diagrams for  $T_{eq}$ ,  $T_{id}$ , and  $T_d$  as well as explain the ranging process in conformance with ITU-T Recommendation G.983.1, the Figs. 3A-H in light of the noted section of the specification (page 15, line 24 to page 18, lines 13) represent a first of two species, the first species disclosing fast protection switching based on the use of ranging specific PLOAM cells used during ranging operation defined in ITU-T G.983.1 as disclosed by the applicant; the second species, as shown in Figs. 10A-H in light of the noted section of the specification (page 18, line 14 to page 19, line 25), disclosing fast protection switching based on the use of non-ranging PLOAM cells used during non-ranging operation.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 7, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshino (US Patent No. 5541962).

Regarding claim 7, Yoshino discloses an optical network comprising an optical splitter (fig. 2, element 13 and col. 4, lines 52-65) connected to (1) a working optical subscriber unit (OSU) of a working circuit via a working optical fiber (fig. 2, element 15a and col. 4, lines 52-65), (2) a protection OSU of a protection circuit via a protection optical fiber (fig. 2, element 15b and col. 4, lines 52-65), and (3) one or more optical network terminals (ONTs) (fig. 2, element 11 and fig. 8, elements 105-107), a method for enabling fast protection switching from the working OSU to the protection OSU, comprising the steps of: (a) synchronizing the working and protection OSUs (fig. 3, col. 6, lines 8-15 and col. 7, lines 42-47); (b) initiating a cell delineation procedure at the protection OSU during normal, non-ranging operations of the working OSU to enable the protection OSU to correctly delineate upstream cells (col. 2, line 65 to col. 3, line 28; col. 5, lines 39-53 and col. 7, lines 1-37); (c) measuring arrival times of corresponding upstream cells at both the working and protection OSUs and (d) generating a propagation delay value based on the arrival times for use by the protection OSU for communications with the one or more ONTs if and when protection switching is implemented upon detection of a failure in the working circuit (fig. 8 and col. 2, line 65 to col. 3, line 28).

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Regarding claim 15, Yoshino discloses the network of claim 7, wherein ranging is not required to be performed by the protection OSU after the protection switching in order to support the communications with the one or more ONTs (col. 2, line 11 to col. 3, line 4).

Regarding claim 16, Yoshino discloses the network of claim 7, wherein step (a) comprises the step of synchronizing frame counters at both the working and protection OSUs (col. 7, line 42 to col. 8, line 2).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8, 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino (US Patent No. 5541962) in view of Ashi et al. ("PON-based All Fiber-optic Access System For High-speed Multimedia Services", Ashi et al., Hitachi Review, Vol. 48 [1999], No. 4).

Regarding claim 8, Yoshino discloses that the network of claim 7 is a passive optical network utilizing time compression multiplexing (col. 1, lines 8-20), and discloses a passive optical splitter (fig. 2, element 13 and col. 4, lines 52-65), but does not disclose that the optical network conforms to ITU-T Recommendation 6.983.1. Ashi et al. disclose an optical network that is a passive optical network comprising TCM transmission and ATM transmission that conforms to ITU-T Recommendation 6.983.1 (Table 1), both transmission types occurring between an OSU and multiple subscribers via an optical splitter (fig. 1 and fig. 2), and both sharing optical transmission facilities, fiber optic cable, and subscribers (page 229, overview and col. 1, paragraph 1 to page 230, col. 1, paragraph 3). It would have been obvious to one of

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ordinary skill in the art at the time of the invention, in light of the combined TCM and ATM PON disclosed by Ashi et al., that the PON, with protection, of Yoshino could also be used for ATM-PON applications conforming to ITU-T Recommendation 6.983.1, in addition to TCM transmission, to add standardized ATM network transmission services.

Regarding claim 11, Yoshino in view of Ashi et al. disclose the network of claim 7, wherein the propagation delay value is generated taking into account differences in upstream and downstream transmission speeds (Yoshino: col. 2, line 65 to col. 3, line 28; col. 5, lines 39-53 and col. 7, lines 1-37) and disclose different upstream and downstream transmission wavelengths used for ATM-PON transmission (Ashi et al.: page 230, col. 2, paragraph 3), where the differences in transmission speeds for different upstream and downstream wavelengths are inherently accounted for by the protection scheme of Yoshino in view of Ashi et al. used for ATM-PON transmission, since the propagation delay is only affected by the difference in fiber length between the active and standby OSUs.

Regarding claim 17, Yoshino discloses an optical network, which inherently has network management means, comprising an optical splitter (fig. 2, element 13 and col. 4, lines 52-65) connected to (1) a working optical subscriber unit (OSU) of a working circuit via a working optical fiber (fig. 2, element 15a and col. 4, lines 52-65), (2) a protection OSU of a protection circuit via a protection optical fiber (fig. 2, element 15b and col. 4, lines 52-65), and (3) one or more optical network terminals (ONTs) (fig. 2, element 11 and fig. 8, elements 105-107), a method for enabling fast protection switching from the working OSU to the protection OSU, comprising the steps of: (a) synchronizing the working and protection OSUs (fig. 3; col. 6, lines 8-15 and col. 7, lines 42-47); (b) initiating a cell delineation procedure at the protection OSU during normal, non-ranging operations of the working OSU to enable the protection OSU to correctly delineate upstream cells (col. 2, line 65 to col. 3, line 28; col. 5, lines 39-53; and col. 7,

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lines 1-37); (c) measuring arrival times of corresponding upstream cells at both the working and protection OSUs and (d) generating a propagation delay value based on the arrival times for use by the protection OSU for communications with the one or more ONTs if and when protection switching is implemented upon detection of a failure in the working circuit (fig. 8; col. 2, line 65 to col. 3, line 28). Yoshino does not disclose a machine-readable medium, having encoded thereon program code, wherein, when the program code is executed by a machine, the machine implements the method for enabling fast protection in the disclosed optical network. Ashi et al. disclose an optical network that is a passive optical network comprising TCM transmission and ATM transmission, both transmission types occurring between an OSU and multiple subscribers via an optical splitter (fig. 1 and fig. 2), and both sharing optical transmission facilities, fiber optic cable, and subscribers (page 229, overview and col. 1, paragraph 1 to page 230, col. 1, paragraph 3). It would have been obvious to one of ordinary skill in the art at the time of the invention, in light of the combined TCM and ATM PON disclosed by Ashi et al., that the PON, with protection, of Yoshino could also be used for ATM-PON applications, in addition to TCM transmission, to add standardized ATM network transmission services. In addition, Ashi et al. disclose a machine-readable medium, where the machine implements network element management functions for the network, and thus inherently has program code executed for implementing the management functions (fig. 1, and page 231, col. 1, paragraphs 2 and 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the machine-readable medium to implement the method for enabling fast protection in the optical network.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino (US Patent No. 5541962) in view of Ashi et al. ("PON-based All Fiber-optic Access System For High-

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speed Multimedia Services", Ashi et al., Hitachi Review, Vol. 48 (1999), No. 4) as applied to claims 8, 11 and 17 above, and further in view of Kim et al. (US Published Patent Application No. 09/735797).

Regarding claim 10, Yoshino discloses that the network of claim 7 is a passive optical network utilizing time compression multiplexing (col. 1, lines 8-20), and discloses a passive optical splitter (fig. 2, element 13 and col. 4, lines 52-65), and protection where an 8-bit pattern within an upstream frame is used for frame timing detection during non-ranging operation (col. 2, line 65 to col. 3, line 28; col. 5, lines 39-53 and col. 7, lines 1-37), but does not disclose that the optical network uses upstream PLOAM cells not associated with ranging. Ashi et al. disclose an optical network that is a passive optical network comprising TCM transmission and ATM transmission, both transmission types occurring between an OSU and multiple subscribers via an optical splitter (fig. 1 and fig. 2), and both sharing optical transmission facilities, fiber optic cable, and subscribers (page 229, overview and col. 1, paragraph 1 to page 230, col. 1, paragraph 3). It would have been obvious to one of ordinary skill in the art at the time of the invention, in light of the combined TCM and ATM PON disclosed by Ashi et al., that the PON, with protection, of Yoshino could also be used for ATM transmission, in addition to TCM transmission, to add ATM network transmission services. In addition, Kim et al. disclose that within an ATM frame, PLOAM cells are used for Operation and Maintenance in an ATM-PON, thus inherently used during non-ranging operation, and disclose message fields within a PLOAM cell and upstream PLOAM cells in the upstream ATM frame (paragraphs 0008 to 0013). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the message field of an upstream PLOAM cell, within an ATM frame, for the 8-bit frame timing detection pattern of Yoshino in view of Ashi et al., to provide protection for ATM transmission using standard PLOAM cells in an ATM frame.



8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino (US Patent No. 5541962).

Regarding claim 12, Yoshino discloses the network of claim 7, wherein a conventional system performs initial ranging for an unprotected working OSU (col. 1, lines 23-55), and where a propagation delay calculation procedure for a protection OSU is initiated during normal, non-ranging operations of a working OSU (col. 2, line 65 to col. 3, line 28; col. 5, lines 39-53; and col. 7, lines 1-37), but does not disclose that the protection OSU is configured into the optical network after ranging. However, if Yoshino discloses initial ranging for an unprotected OSU and discloses a propagation delay calculation procedure for a protection OSU initiated during normal, non-ranging operations of a working OSU, then it would have been obvious to one of ordinary skill in the art at the time of the invention that the protection OSU could be configured into the originally unprotected network after the initial ranging, in order to decrease initial network equipment costs or to allow for an unprotected network to be upgraded to a protected network without having to interrupt normal operations of the working transmission.

#### ***Allowable Subject Matter***

9. Claims 9, 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

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10. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (703) 305-0370. The examiner can normally be reached M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



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